

CLAIMS

11. A method of making a porous article comprised of bonded particles, the method comprising the steps of:

- 1) forming a dispersion comprising a liquid carrier and the particles and a polymerisable monomeric material;
- 2) adding a surfactant in a concentration according to the desired density of the porous article and then introducing bubbles of gas with agitation to form a foam and allowing or causing the bubbles to coalesce to form cells some of which form struts;
- 3) polymerising the monomeric material;
- 4) drying the structure to remove the liquid carrier and provide a solid article having pores derived from the bubbles; and
- 5) firing the article to provide a ceramic bond and to remove organic material present, whereby the porous article formed has a porosity of 20% to 95% and comprises cell walls and struts defining pores of pore sizes in the range of 15 to 150 micrometres.

12. A method according to Claim 11, wherein the cells of the foam are adjusted to provide pore sizes greater than 150 micrometres.

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13. A method according to Claim 11 including the step of controlling the onset of polymerisation by adjustment of the addition levels of the initiator and catalyst for polymerisation of the monomer to influence the growth of the foam structure.
14. A method according to Claim 13, wherein the onset of polymerisation is controlled by adjustment of the concentration of oxygen to influence the growth of the foam structure.
15. A method according to Claim 14, wherein the period until onset of polymerisation is between an instantaneous polymerisation and 20 minutes.
16. A method according to Claim 11, including the step of applying a partial vacuum to a foam before the commencement of polymerisation until after the end of polymerisation, after which the foam is brought back to atmospheric pressure to increase the size of cells in the foam.
17. A method according to Claim 11, wherein the firing is carried out at 1250°C or 1350°C for two hours.
18. A method according to Claim 11, wherein the particles are hydroxyapatite.
- 435/445 19. A method according to Claim 11, including the subsequent step of growing bone cells in the porous ceramic product.

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20. A method according to Claim 11, including adding a drug to the pores of the article.